

Claims

1. Abutment for a tooth implant with a root section or shaft (2) that can be anchored in a jaw preferably by being screwed in, and onto the coronal area of which the abutment (4, 4a, 8, 18) can be fixed, e.g. by an adhesive bond, characterized in that the abutment (4, 4a, 8, 18) is part of at least one set of pre-fabricated abutments, which differ in form and each of which is adapted to the form of a natural tooth.
2. Abutment as claimed in claim 1, characterized by several sets with differing abutments each adapted to the natural form of a tooth, whereby the abutments (4, 4a, 8, 18) vary in size from set to set.
3. Abutment as claimed in claim 1 or 2, characterized in that the abutment (4, 8, 18) corresponds to the reduced form of a natural front tooth, a premolar or a molar.
4. Abutment as claimed in one of the foregoing claims, characterized in that the abutment set has a reduced number of abutments (4, 4a, 8, 18) with different forms, for example only abutments that correspond to the reduced form of a natural front tooth, a premolar or a molar.
5. Abutment as claimed in one of the foregoing claims, characterized in that the abutments (4, 4a, 8, 18) in comparison with the natural tooth form are smaller by a dimension that is less than or equal to the wall thickness of a further structure to be provided on the abutment.
6. Abutment as claimed in one of the foregoing claims, characterized in that the outer contour of the respective abutment (4, 8) as compared with the outer contour of the form a natural tooth is reduced by approximately 0.1 to 2.5 mm.
7. Abutment as claimed in one of the foregoing claims, characterized in that the

abutment is made of aluminum oxide, zircon oxide, metal or a high-strength material.

8. Abutment as claimed in one of the foregoing claims, characterized in that the abutment made of aluminum oxide has a wall thickness of at least 0.2 to 1.2 mm.

9. Abutment as claimed in one of the foregoing claims, characterized in that the abutment made of zircon oxide has a wall thickness of at least 0.15 to 0.8 mm.

10. Abutment as claimed in one of the foregoing claims, characterized in that the coronal area of the implant shaft (2) consists of a bar or a bar-like projection (3) and that the abutment (4, 4a, 8, 18) has a recess (6) adapted to the form of the bar.

11. Abutment as claimed in one of the foregoing claims, characterized in that the abutment (4, 4a, 8, 18) is pre-treated on a surface to be connected with the implant shaft (2) for optimization of the adhesive bond, in particular by means of mechanical roughening, etching and/or coating with an active layer reacting with the bonding agent of the adhesive bond.

12. Abutment as claimed in claim 11, characterized by a protective layer for covering the surface-treated layer.

13. Abutment as claimed in one of the foregoing claims, characterized in that the abutment is designed to be able to be etched on its surface for the adhesive bond with the implant shaft, e.g. it consists of an etchable surface layer, e.g. of silicon oxide.

14. Abutment as claimed in one of the foregoing claims, characterized in that the abutment, e.g. the prepared abutment, is the basis for an additional structure.

15. Abutment as claimed in claim 14, characterized in that the abutment (4), e.g. the prepared abutment (4), is the basis for a crown with a shell forming the outer surface of the crown burned, cast or sintered onto the abutment, for example burned-on ceramic.

16. Abutment as claimed in claim 14, characterized in that the abutment, e.g. the prepared abutment, is the basis for a separately manufactured structure, for example for a separately manufactured shell or crown, for a bridge element, for a telescope or bar.
17. Abutment as claimed in one of the foregoing claims, characterized in that the abutment (8) is manufactured as a compensating cap with a truncated cone-shaped coronal area, the shell surface (9) of which is asymmetric to a longitudinal implant axis (L) such that the shell surface has a different conical shape at two areas (9.1, 9.2) opposing the longitudinal implant axis.
18. Abutment as claimed in one of the foregoing claims, characterized in that the abutment (4, 4a, 8, 18) is a cap.
19. Abutment as claimed in one of the foregoing claims, characterized in that the axis of the abutment forms an angle with the longitudinal axis of the implant or of the root shaft (2, 2a), for example an angle up to approximately 20°.
20. Abutment as claimed in one of the foregoing claims, characterized in that the basis or stage of the abutment has a garland-shaped course and that the lowest point of this course is buccal-labial and lingual-palatinal.
21. Abutment as claimed in claim 20, characterized in that the buccal-labial distance between the lowest point of the garland-shaped course to the tip of the abutment is different from the corresponding palatinal-lingual distance.
22. Abutment as claimed in one of the foregoing claims, characterized in that on the outer surface of the base part of the abutment and/or on the outer surface of the coronal part of the shaft (2), there is a protective layer or protective sleeve covering these surfaces.

23. Abutment as claimed in one of the foregoing claims, characterized in that the abutment and/or shaft is provided with growth factors and/or substances to accelerate healing, for example bacteriocidal or bacteriostatic agents or medications.
24. Abutment as claimed in one of the foregoing claims, characterized in that the individual anatomical structural form corresponds to an even reduction around the natural tooth (Fig. 20).
25. Abutment as claimed in one of the foregoing claims, characterized in that the outer form of the abutment is stylized and has straight surfaces and rounded edges and is schematically equivalent, with a reduction to a greater or lesser extent, to the tooth to be replaced (Fig. 21).
26. Abutment as claimed in one of the foregoing claims, characterized in that there is an absolute or relative height difference between the premolar and molar cusps and the garland-shaped base (12.3) and stage (12) in the upper jaw/lower jaw.
27. Abutment as claimed in one of the foregoing claims, characterized in that the form of the abutment in top view, in the area of the passage through the soft tissue and in the area of the base (12.3) is characterized similar to the corresponding natural teeth, as follows:
 - Upper jaw no. 1: nearly same diameter m/d and b/p, round or square toward distal somewhat convex;
 - Upper jaw no. 2: as upper jaw no. 1, but somewhat more oval, in labio-palatinal direction;
 - Upper jaw no. 3: spheroidal oval with distal convexity;
 - Upper jaw no. 4: double oval / figure 8 form;
 - Upper jaw no. 5: oblong oval;
 - Lower jaw no. 1 and 2: ditto, triangular with reduction toward palatinal;

Lower jaw no. 3: similar, somewhat more round;

Lower jaw no. 4 and 5: oblong oval, somewhat triangular course toward buccal;

Lower jaw no. 6 / 7 / 8 rectangular or square with more or less rounded edges.

28. Abutment as claimed in one of the foregoing claims, characterized in that the outer form of the base is straight, convex, concave, parallel, diverging, converging to the soft tissue.

29. Abutment as claimed in one of the foregoing claims, characterized in that the outer abutment surface in the area of the body corresponds to the typical curvature characteristics of teeth.

30. Abutment as claimed in one of the foregoing claims, characterized in that the abutment is provided with an elastic or flexible anatomically individual or stylized composite layer or tooth-colored layer, enabling the provisional replacement of a crown that can be burdened immediately.

31. Abutment as claimed in one of the foregoing claims, characterized in that there is a distance of 0.2 to 6 mm from the garland-shaped stage and the garland-shaped base bond surface (2.3) to the implant.

32. Abutment as claimed in one of the foregoing claims, characterized in that the cap is part of a cap set, which includes at least the following caps:

Tooth	Cap length	Mesio-distal diameter at stage 12	Labio-buccal-oral diameter at stage 12
Upper jaw			
Middle incisor	10.5 - 5.5	7.0 - 4.0	6.0 - 3.0
Side incisor	9.5 - 4.5	5 - 2.0	5.0 - 2.0
Canine	10.0 - 5.0	5.5 - 2.5	7.0 - 4
First premolar	8.5 - 3.5	5.0 - 2.0	8.0 - 4.0
Second premolar	8.5 - 3.5	5.0 - 2.0	8.0 - 4.0
First molar	7.5 - 2.5	8.0 - 5.0	10.0 - 6.0
Second molar	7.0 - 2.5	7.0 - 4.0	10.0 - 4.0
Third molar	6.5 - 2.5	6.5 - 2.5	9.5 - 4.0
Lower jaw			
Middle incisor	9.0 - 4.0	3.5 - 2.0	5.3 - 2.3
Side incisor	9.5 - 4.5	4.0 - 2.0	5.8 - 2.8
Canine	11.0 - 6.0	5.5 - 2.5	7.0 - 4.0
First premolar	8.0 - 3.5	5.0 - 2.0	6.5 - 3.5
Second premolar	8.5 - 3.0	5.0 - 2.0	7.5 - 4.0
First molar	7.0 - 2.5	9.0 - 6.0	9.0 - 5.0
Second molar	7.0 - 2.0	8.0 - 5.0	9.0 - 5.0
Third molar	7.0 - 2.5	7.5 - 4.5	9.0 - 5.0

33. Tooth implant with a root section or shaft (2) that can be anchored in a jaw preferably by being screwed in and with an abutment (4, 4a, 8, 18) that can be fixed by an adhesive bond on a coronal area of the shaft (2), characterized in that

the abutment (4, 4a, 8, 18) is embodied according to one of the foregoing claims.

34. Process for manufacturing a dental prosthesis using an abutment according to one of the foregoing claims, characterized in that an abutment (4) corresponding to the form of the tooth to be reconstructed is selected from the abutment set and that this abutment (4) is then prepared and provided with the further structure (5, 7).

35. Process as claimed in claim 34, characterized in that a shell (5) forming the outer surface of the crown is applied, e.g. burned, to the prepared abutment (4) forming the base of a crown.

36. Process as claimed in one of the foregoing claims, characterized in that an additional, separately manufactured structure (7) is fixed to the abutment (4) after preparation.

37. Process as claimed in one of the foregoing claims, characterized in that the abutment is manufactured individually corresponding to the tooth to be reconstructed.